

other countries, a new era of our knowledge of bird distribution has begun.

Atlas projects, monitoring and bird census programmes, migration studies, etc. have led to international working groups, committees or similar instruments of cooperation, which, besides the established international societies and councils (such as the ICBP and its many national sections), nowadays play an important role in ornithological research and bird protection as well. May these activities not only advance ornithological research but also improve the chance of survival for birds in Western Europe.

Address: Dr. Einhard Bezzel, 81 Garmisch-Partenkirchen, Gsteigstrasse 43, Institut für Vogelkunde, West Germany.

© British Ornithologists' Club

Some trends in ornithology in East European Countries during the last fifty years

by Z. Bochenski

In the last half-century noticeable progress was made in ornithology in East European countries despite the setback and, in some of them, even complete stoppage of scientific activities brought about by World War II. In addition to the journals *Aquila* (Budapest) and *Berichte des Vereins Schlesischer Ornithologen* (Breslau), which had been started some time before, new periodicals began to appear in the thirties. They are *Moravsky Ornitholog* = *Ceskoslovensky Ornitholog* (published at Prerov from 1934 to 1949), the continuation of which is *Zprávy MOS*; then *Acta Ornithologica Mus. Zool. Polon.* (Warsaw, since 1934); *Sylvia* (Praha, since 1936); *Beiträge zur Vogelkunde* (Leipzig, since 1949); *Larus* (Zagreb, since 1947); *Der Falke* (Berlin, since 1954); and *Notatki Ornitologiczne* (Warsaw, later Wrocław, since 1960), not to mention irregularly appearing smaller ephemerals.

Ornithological studies have also been published in other zoological periodicals, of which I shall name only some: *Acta Zoologica Cracoviensia* (Kraków); *Przegląd Zoologiczny* (Wrocław); *Ekologia Polska* (Warsaw); *Zoologicke Listy* (Brno); *Biologia* (Bratislava); *Biologicke Prace* (Bratislava); *Vertebrata Hungarica* (Budapest); *Zoologische Abhandlungen . . .* (Dresden); *Travaux du Museum d'Hist. Nat. "Gr. Antipa"* (Bucarest); *Comunicari de Zoologie* (Bucarest); *Tibiscus* (Bucarest); and *Bulletin de l'Institut de Zoologie et Musee* (Sophia). Hundreds of papers appearing every year cover all the divisions of ornithology, and their discussion would take far more room than provided for in a short note; therefore I shall confine myself to several chosen divisions with which I am more closely concerned, omitting the remaining ones entirely. I hope that none of the ornithologists working in these last fields will take this amiss.

Faunistic studies which have been carried out in all the countries being discussed, although with fluctuating intensity, in these last decades were undoubtedly influenced by successive editions of the field guide by Peterson, Mountfort & Hollom and that by Makatsch (1969). The first major faunistic monograph that appeared in the German Democratic Republic (GDR) (I omit all the German publications prior to 1945) was that of birds in Saxony by Heyder (1952). A monograph of the birds of Mecklenburg, edited by Klaafs

& Stübs (1977), was issued 25 years later as the first volume of the *Avifauna of the GDR*, which unlike most works of this kind, is divided into volumes on the basis of regional divisions of the country and not on the basis of systematics. Here I must also mention the *Atlas der Verbreitung Palaearktischer Vögel*, which is the result of the collaboration of German and Soviet ornithologists, 7 parts of which have come out so far (1960-1978).

In Poland, after the nineteenth-century work of Taczanowski (1882), the first attempt at a comprehensive avifauna was Sokolowski's (1936) popular-scientific book on the Passeriformes; the outbreak of war however prevented the publication of its second volume. It was only towards the end of the fifties that the whole work, thoroughly revised, appeared (Sokolowski 1958). At nearly the same time a volume on birds was published in a series devoted to the freshwater fauna (Dunajewski 1938). Its author, concerned chiefly in systematics, died in 1944 and Ferens & Wasilewski (1977) prepared the present entirely new edition. Tomialojć's (1972) book is a critical recapitulation of the studies made up to that time and the basis for further studies.

In Czechoslovakia, Ferienc (1964-65) wrote a monograph of the birds of Slovakia, now in its second revised edition (1977-79). A full survey of the birds of Bohemian Silesia was prepared by Hudec, Kondelka & Novotny (1966), while 2 volumes devoted to birds (a third and last is in preparation) edited by Hudec & Cerny 1972 and 1977), have appeared in the series *Fauna CSSR*.

About 20 years ago the birds of Hungary were written up by a team under the direction of Szekassy (1958) as a part of the comprehensive work *Fauna Hungariae*. Somewhat earlier, Lintia (1954, 1955) published the second and third volumes of his work on the birds of Roumania. Unfortunately, the first volume, which was to deal with the Passeriformes, has not come out. In 1978 the first part of a work on birds, edited by Catuneanu (1978), was published as a part of a general survey of the fauna.

The avifauna of the Balkans has not, as yet, received a full monograph. Two books concerning that area were issued in 1950; a rather sketchy work on the birds of Bulgaria by Patev (1950) and a monograph of the birds of Macedonia by Makatsch (1950), covering the southern part of Yugoslavia, Bulgaria and the northeastern part of Greece. Of more importance is the survey of the birds of the Balkan Peninsula by Matvejev (1976), the first volume of which contains data from Bulgaria, Greece, Albania and a large part of Yugoslavia. In addition to the books mentioned above, there are many faunistic papers concerning areas of various size, mostly of interest from the ornithological point of view, as well as contributions and notes.

Knowledge of the changes occurring in the avifauna in the Pleistocene and Holocene during the climatic changes in Europe at that time permits us better to understand the genesis of the present-day fauna. Palaeornithological studies serve this purpose. The best tradition of such studies exists in Hungary, where Lambrecht's (1933) work, in which he summarizes the world achievements in this field, became the starting point of further intensive studies, and particularly in Hungary where Prof. Kretzoi and Prof. Jánossy have published a great many papers containing the results of their investigations of material from Hungary, Roumania, Czechoslovakia, Poland and Austria. Jánossy's (1976, 1977, 1978, 1979) works, in which he deals with the fossil birds of the Carpathian Basin, are unquestionably a

synthesis of these studies. In Yugoslavia fossil birds are the subjects of numerous papers by Prof. Malez and his co-workers. One of these, interesting from the zoogeographical point of view, is the work of Malez (1972) on the distribution of the cold-loving animals in the Pleistocene, in which, besides different mammalian species, he discusses also the genus *Lagopus*. In Poland Niezabitkowski's (1932) study of the Ptarmigan *Lagopus mutus* and Willow Grouse *L. lagopus* from Mamutowa Cave appeared nearly fifty years ago, and there has been nothing since till the results of my many years' investigation gathered in a monograph on the birds of the Younger Quaternary in Poland (Bochenski 1974). Since then many new fossil remains have been worked out, including those of birds of the Younger Quaternary from Bacho Kiro Cave in Bulgaria (Bochenski, in press). Some bird remains from the Upper Cretaceous of the Gobi Desert, collected during Polish-Mongolian palaeontological expeditions have been described by Elzanowski (1974, 1977) and others are being prepared. The results of these studies may be of considerable importance to the phylogenetic systematics of birds. Few papers have been published in Roumania, but they contain descriptions of various interesting new forms, as exemplified by Grigorescu & Kessler's (1977) work.

Studies of bird migration and, in that connection, large scale mist-netting of birds, have also contributed to the knowledge of local avifauna. Bird ringing is carried on in all East European countries, and there are several wide scale investigations in progress. The most important one is the so-called "Operation Baltic", initiated in the vicinity of the Ornithological Station, Polish Academy of Sciences, at Górkki Wschodnie in Poland in 1960, spreading in the following years to other points along the Baltic coast in Poland, the GDR and the Baltic Republics of the USSR. At these points, active during the spring and autumn migrations, tens of thousands of birds have been caught, ringed, measured and weighed. The work methods have been described in detail by Busse & Kania (1970a) and the observation points listed in annual reports (Busse & Kania 1970b, 1973 and others). The results of these studies have, as yet, been published in some dozens of notes and papers, of which one of the most important is Busse's (1976) on spring migration. Analogous investigations, though on a smaller scale, were carried out in the Karkonosze Mts. 1971-1973 (Dyrz, in press) and, lately, in Bulgaria, in the valley of the River Struma (Ivanov, pers. comm.).

Studies on spatial orientation of birds were started in Poland in the thirties and after the war continued at the Institute of Psychology and Animal Ethology, Jagiellonian University, under the direction of Prof. R. Wojtusiak. Their results presented in 15 papers, the last of which is still in press. Among other problems, they deal with the influence of terrestrial magnetism on the homing of Swallows *Hirundo rustica* (Wojtusiak, *et al.* 1978).

In monographs of life-histories, without doubt GDR ornithologists have the greatest achievements and their work of this type has appeared, above all, in the series Die Neue Brehm-Bücherei. At first, in the fifties, they were popular and compilatory in style, but more recently both their volume and scientific value has increased. A few of them, taken at random, may be mentioned here by way of example, namely, the studies on larks by Pätzold (1963, 1971), on the Pygmy Owl *Glaucidium passerinum* by Schön (1978) and on the Saker Falcon *Falco cherrug* by Baumgart (1978). In Hungary

Kapoczy (1979) has monographed the White-winged Black Tern *Chlidonias leucopterus* and the Whiskered Tern *Chlidonias hybrida* and in Poland Mackowicz (1970) the Wood Lark *Lullula arborea*. In Czechoslovakia single species studies are, as a rule, divided among smaller publications, e.g. papers on the Greylag Goose *Anser anser* (Hudec 1971, 1973; Hudec & Formánek 1970; Hudec & Kux 1971, 1972; Kux & Hudec 1970; and others). The life-histories of some ducks, thrushes and other birds have been treated in the same way.

A related group of studies deals with breeding biology, including nest building and a wide range of papers on eggs. The periodical *Beitrag zur Fortpflanzungsbiologie der Vögel*, devoted specially to these problems, was published in Berlin until 1944; unfortunately no similar periodicals appear nowadays, though the number of papers on this subject remains fairly large. Nesting data are often card-indexed, e.g. at the Institute of Vertebrate Zoology, CSASc, at Brno and at the Institute of Systematic and Experimental Zoology, Polish Academy of Sciences, in Cracow. The most important such studies in Poland are those on the nesting of thrushes *Turdus* (Bocheński 1968) and Corvidae (Kulczycki 1973). In Czechoslovakia more attention has been given to breeding biology than to nest building itself. Havlín's (1971) paper on the reed warblers *Acrocephalus* and Pellantova's (1975) on the Swift *Apus apus* may be mentioned here as examples. In Bulgaria Nankinov is engaged in a study of nesting and Ivanov collects oological material (pers. comm.). In the seventies several larger monographs were published in book form. Makatsch's (1975-77) 2-volume book on the birds of Europe is an outstanding work. In Poland Gotzman & Jablonski (1972) described nests and eggs, and in Czechoslovakia Pikula (1976) worked out methods of nest study.

As I have already mentioned, I neglect many lines of ornithological research out of necessity, of which ecological studies, in respect of quantity, are second only to faunistic ones. However, I should mention J. Pinowski's participation in organising international investigations on granivorous birds and as editor of the *International Studies on Sparrows*, which has been issued in Warsaw since 1967; as well as co-editor of books (Kendeigh & Pinowski 1973; Pinowski & Kendeigh 1977). I have also left out typical systematic, anatomical and physiological works and those pertaining to the psychology of birds, even though in each of these groups we can name many interesting items. The same is true of the achievements in the field of exotic studies, since various ornithologists from the East European countries have worked in all continents.

References:

- Baumgart, W. 1978. *Der Sakerfalke*. Die Neue Brehm-Bücherei 514. A. Ziemsen Verlag: Wittenberg Lutherstadt.
- Bochenki, Z. 1968. Nesting of the European members of the genus *Turdus* Linnæus 1758 (Aves). *Acta Zool. Cracov.* 13: 349-440.
- 1974. *The Birds of the Late Quaternary of Poland*. Państwowe Wydawnictwo Naukowe: Warszawa - Kraków.
- (in press). *Birds. In: Excavations in the Bacho Kiro Cave* (Bulgaria).
- Busse, P. 1976. The spring migration of birds at the east part of Polish Baltic coast. Operation Baltic paper No. 27. *Acta Zool. Cracov.* 21: 121-262.
- Busse, P. & Kania, W. 1970a. Operation Baltic 1961-1967. Working methods. (Polish with English summ.) *Acta Ornith.* 12: 231-268.
- 1970b. Operation Baltic 1970. Polish section. Reports on the field work. (Polish with English summ.) *Notatki Orn.* 11: 52-57.
- 1973. Operation Baltic 1972. Polish section. Report on the field work. (Polish with English summ.) *Notatki Orn.* 14: 79-86.

- Catuneanu, I. (coord.) 1978. *Aves. Fauna Republicii Socialiste Romania*. Vol. XV. Fasc. I. Editura Academiei R.S.R.: Bucuresti.
- Dunajewski, A. 1938. *Ptaki (Aves). Fauna Slodkowodna Polski*. Warszawa.
- Dyrce, A. (in press). Autumn migration of birds at Szrenica Pass, Karkonosze Mts., Poland. (Polish with English summ.) *Acta Zool. Cracov.* 25.
- Elzanowski, A. 1974. Preliminary note on the palaeognathous birds from the Upper Cretaceous of Mongolia. *Palaeont. Pol.* 30: 103-109.
- 1977. Skulls of *Gobipteryx* (Aves) from the Upper Cretaceous of Mongolia. *Palaeont. Pol.* 37: 153-165.
- Ferens, B. & Wasilewski, J. 1977. *Ptaki (Aves). Fauna Slodkowodna Polski*. 3. Panstwowe Wydawnictwo Naukowe: Warszawa-Poznan.
- Ferianc, O. 1964-1965. *Stavovce Slovenska: Vtaky*. I, II Vydav. Slov. Akad. Ved: Bratislava.
- 1977-1979. *Vtáky Slovenska*, 1, 2. (2nd ed.). Veda: Bratislava.
- Gotzman, J. & Jablonski, B. 1972. *Gniazda naszych ptaków*. PZWS: Warszawa.
- Grigorescu, D. & Kessler, E. 1977. The Middle Sarmatian avian fauna of South Dobrogea. *Rev. Roum. de Géologie Geoph. et Géogr.* 21: 93-108.
- Havlin, J. 1971. Nesting biology of the Great Reed Warbler and Reed Warbler on the Namescké rybníky Ponds (Czechoslovakia). *Zool. Listy* 20: 51-68.
- Heyder, R. 1952. *Die Vögel des Landes Sachsen*. Akademische Verlagsges.: Leipzig.
- Hudec, K. 1971. The breeding environment of the Greylag Goose (*Anser anser*) in Czechoslovakia. *Zool. Listy*. 20: 177-194.
- 1973. Die Nahrung der Graugans, *Anser anser*, in Südmähren. *Zool. Listy*. 22: 41-58.
- Hudec, K. & Cerny, W. (ed.). 1972. *Fauna CSSR. Ptáci 1*. Academia: Praha.
- 1977. *Fauna CSSR. Ptáci 2*. Academia: Praha.
- Hudec, K. & Formánek, J. 1970. Ringing results of the Greylag Goose (*Anser anser*) in Czechoslovakia. *Zool. Listy*. 19: 145-162.
- Hudec, K., Kondelka, D. & Novotny, I. 1966. *Ptactvo Slezska*. Opava.
- Hudec, K. & Kux, Z. 1971. The clutch size of the Greylag Goose (*Anser anser*) in Czechoslovakia. *Zool. Listy*. 20: 365-376.
- 1972. Passage migration of the Greylag Goose (*Anser anser*) through Southern Moravia. *Zool. Listy*. 21: 245-261.
- Jánossy, D. 1976-79. Plio-Pleistocene bird remains from the Carpathian Basin. I. Galliformes. 1. Tetraonidae. *Aquila*. 82: 13-36. (1977). II. Galliformes. 2. Phasianidae. *Aquila*. 83: 29-42. (1978). III. Strigiformes, Falconiformes, Caprimulgiformes, Apodiiformes. *Aquila*. 84: 9-36. (1979). IV. Anseriformes, Gruiformes, Charadriiformes, Passeriformes. *Aquila*. 85: 11-39.
- Kapocsy, G. 1979. *Weissbart- und Weissflügelseeschwalbe*. Die Neue Brehm-Bücherei 516. A. Ziemsen Verlag: Wittenberg Lutherstadt.
- Kendeigh, S. C. & Pinowski, J. (ed.). 1973. *Productivity, population dynamics and systematics of granivorous birds*. PWN: Warszawa.
- Klafs, G. & Stübs, J. (ed.). 1977. *Die Vogelwelt Mecklenburgs*. VEB Gustav Fischer Verlag: Jena.
- Kulczycki, A. 1973. Nesting of the members of the Corvidae in Poland. *Acta Zool. Cracov.* 18: 583-666.
- Kux, Z. & Hudec, K. 1970. Der Legebeginn bei der Graugans (*Anser anser* L.) in der Tschechoslowakei. *Acta Musei Moraviae*. 55: 233-246.
- Lambrecht, K. 1933. *Handbuch der Palaeornithologie*. Gebrüder Borntraeger: Berlin.
- Lintia, D. 1954. *Pasarile din R.P.R.* vol. II (Cypseli - Accipiters). 1955. Vol. III (Gressores - Galli). Editura Academiei R.P.R.: Bucuresti.
- Mackowicz, R. 1970. Biology of the Woodlark *Lullula arborea* (Linnaeus 1758) (Aves) in the Rzepin Forest (Western Poland). *Acta Zool. Cracov* 15: 61-160.
- Makatsch, W. 1950. *Die Vogevelt Macedoniens*. Akademische Verlagsges.: Leipzig.
- 1969. *Wir bestimmen die Vögel Europas*. 2. Aufl. Neumann Verlag: Radebeul.
- 1975-1977. *Die Eier der Vögel Europas*. 1-2. Neumann Verlag: Leipzig-Radebeul.
- Malez, M. 1972. Über die Verbreitung Kaltzeitlicher Tiere im jüngeren Pleistozän Südost-Europas. (Croatian with German summ.). Rad 364. Zagreb.
- Matvejev, S. D. 1976. *Survey of the Balkan Peninsula Bird Fauna*. (Serbian with English summ.). Beograd.
- Niezabitowski, Lubicz E. 1932. *Lagopus lagopus* L. et *Lagopus mutus* Montin, ainsi que la faune qui les accompagne dans le quaternaire de la Pologne. *Rocznik Pol. Tow. Geol.* 8: 179-192.
- Patev, P. 1950. *The Birds of Bulgaria* (in Bulgarian). Sofia.

- Pätzold, R. 1963. *Die Feldlerche*. Die Neue Brehm-Bücherei 323. 1971. *Heidelerche und Haubenlerche*. Die Neue Brehm-Bücherei 440. A. Ziemsen Verlag: Wittenberg Lutherstadt.
- Pellantová, J. 1975. Breeding of the Swift (*Apus apus* Linn.). *Zool. Listy*. 24: 249-262.
- Pikula, J. 1976. *Metodika výzkumu blízké bionomie ptactva*. Vlastivedny ustav: Prerov.
- Pinowski, J. & Kendeigh, S. C. (ed.). 1977. *Granivorous birds in ecosystems*. Cambridge Univ. Press: Cambridge.
- Schönn, S. 1978. *Der Sperlingskauz*. Die Neue Brehm-Bücherei 513. A. Ziemsen Verlag: Wittenberg Lutherstadt.
- Sokolowski, J. 1936. *Ptaki ziem polskich*. 1. Poznan.
- 1958. *Ptaki ziem polskich*. 1-2. PWN: Warszawa.
- Székessy, V. 1958. *Aves Madarak. Fauna Hungariae* 21-32. Akademiai Kiadó: Budapest.
- Taczanowski, W. 1882. *Ptaki krajowe*. I-II. Kraków.
- Tomialojc, L. 1972. *The Birds of Poland*. (Polish with English summ.). PWN: Warszawa.
- Wojtusiak, R. J., Bochenski, Z., Dylewska, M. & Gieszczykiewicz, J. 1978. Homing experiments on birds. Part XIII. The Influence of Terrestrial Magnetism on Homing Ability in the Swallow, *Hirundo rustica* L. *Folia Biol.* (Kraków). 26: 287-293.
- Address:* Dr Zygmunt Bochenski, Institute of Systematic and Experimental Zoology, Pol.Ac.Sc., 31-016 Kraków, Slawkowska 17, Poland.

Some of the results of ornithological investigations in the Soviet Union for the past fifty years

Yu. A. Isakov

I am grateful to the British Ornithologists' Club for their kind offer to familiarize British ornithologists with investigations being conducted in the Soviet Union in this field. This is not a simple task since I am to give in a concise form the results of investigations carried out on the vast territory of our country for the period of half a century. Survey of even the most essential ornithological research in this period would inevitably become a bare enumeration of themes and performers. Therefore I shall dwell only on a few aspects, with just a few examples, which I think of most interest.

Russian and Soviet ornithology has an old history. Great and distinctive scientists such as N. A. Severtsov, M. A. Menzbier, P. P. Sushkin and others started that history and much of what follows has been carried out by their pupils and by pupils of their pupils.

Avifaunistics occupies a special place in ornithological investigation, since it is a relevant base for the development of other scientific trends. The degree of faunistic knowledge of any country serves as an index of the general level of development of ornithology there. By the end of the first quarter of the twentieth century, many country regions had been investigated by ornithologists and for some of them faunistic reviews had been published. However, M. A. Menzbier's monograph covered only the European part of the country, while many regions of Siberia, the Far East and Soviet Central Asia were still "blank". A species list for the whole country was still lacking.

For the past 50 years practically the whole of the Soviet territory has been covered by ornithological investigations, with the "blanks" or regions on the periphery drawing most of the attentions of scientists. The appearance of a wide network of ornithological collectives based on institutes of the Academy of Sciences of the USSR and Academies in each Republic and of their regional scientific centres, of Universities and of other higher educational institutions, as well as the creation of State nature reserves, have all